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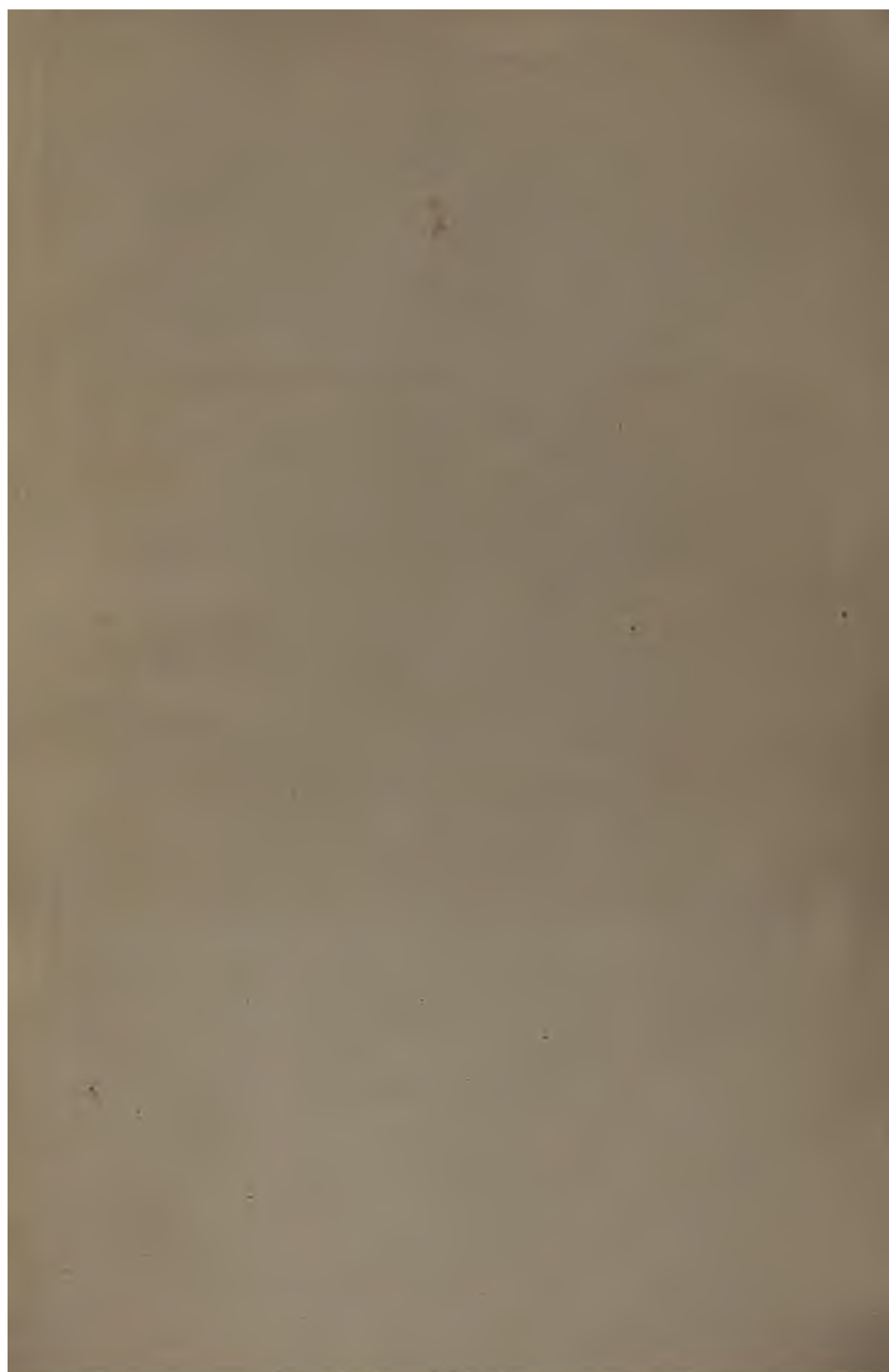
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HYGIENE OF CHILDHOOD

OR

THE CARE OF CHILDREN THROUGHOUT
CHILDHOOD AND PUBERTY,

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FRANCIS H. RANKIN, M. D.

ONE OF A SERIES OF LECTURES GIVEN BY THE MEDICAL BOARD
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HYGIENE OF CHILDHOOD.*

BY

FRANCIS H. RANKIN, M. D.

In my lecture on the care of infants, I endeavored to point out the importance of certain rules and regulations, which are necessary for the proper maintenance of health throughout the period of infancy. I tried to impress upon you the importance of the formation of regular habits at an early age, and also of the necessity of a full amount of sleep at regular hours, of a carefully selected and variety of simple food given at stated intervals, the protection of the body from chill by proper clothing, pure air to breathe indoors, and cleanliness.

In my lecture to-day, it will be my aim to show you that it is equally important to enforce these rules throughout childhood, that the development of the child may not be retarded or interfered with.

Infancy includes the space of time from birth to the completion of the first dentition, about two and a half years, when childhood may be properly said to begin. The little one can now make known its wants and discomforts, the dangers incident to dentition are over, the nervous system is less susceptible to all impressions, and not so easily disturbed by injudicious feeding or exposure to cold, both of which are so disastrous at an earlier age.

In proportion to the proper guidance and attention given the child during the earlier years of life, will

*A Lecture (with additional notes) to mothers and nurses, given at the Newport Hospital, December 19th, 1885.

depend the strength of its body at maturity. This question, the care of children, is so profound, that I can but briefly touch upon some of the essential points. The moral, mental, and physical training are equally important, but time forbids me to dwell upon them all. I wish however to suggest one thought for your consideration, namely, that the moral welfare of a being, is very often dependent upon, or influenced by, the physical and mental condition. With a healthy body and healthy nerve force, there is far less likelihood of a bad state of morals, than when the physical system is imperfect, when the digestive organs have been perverted by improper and too stimulating food, and the nerve force exhausted by too profound mental work, and an insufficient amount of sleep during the period of youth.

During these important years, when the child is rapidly developing, no pains should be spared to establish habits of regularity. They are essential to a healthy existence. When once fairly established, nature's love for order will create a desire in the child to continue these habits. That which at first may have been difficult to implant, takes deep and permanent root.

Simplicity of food is essential to good digestion. In order that the functions of digestion may be properly carried on, only such food should be given as the digestive organs can digest or dissolve with ease, and put in a form that the absorbents can take up, and then allow a period of rest before the next meal. By rest, I mean a period of time when the glands, whose duty it is to manufacture the digestive

fluids, are not in active operation. This glandular activity ceases only when there is no food in the stomach, or when the food is in a condition for absorption. If the due amount of rest is not obtained, then these glands are kept too long in a state of congestion,* and soon cease to do their work properly, and there is resulting what is commonly called an attack of indigestion, the stomach and bowels become irritable, and we have ensuing loss of appetite and strength, fever, pain, vomiting, diarrhœa, etc. It is just as absurd to expect that the stomach of a child should be capable of digesting the same hearty kinds of food as the adult, as to expect that its arms should lift as heavy weight, or its legs should carry it as fast or as far.

During the early years of childhood, that is from two to six years of age, milk should constitute a greater portion of the food; of course farinaceous food, easily digestible vegetables, good ripe fruit, eggs, and meat should be given. The importance of the latter article, meat, is however apt to be overestimated during early life. A little fresh meat once a day should be given, but except from ill health, and by the advice of a physician, a child under seven, should never have meat more than once a day.

Children during school life must be well fed, for

*As I shall use the word congestion frequently in this lecture, I wish you to clearly understand its true meaning. By congestion is meant, that a greater amount of blood is supplied to the part in question, than is the case when the part is in a state of repose or inactivity. When any one function of the body is called into activity, as the brain in thinking, the stomach or intestinal canal in digesting, the liver or any of the various glands or organs of the body in the performance of their duty, there instantly takes place an accession of blood at the point of increased activity, a healthy state of congestion takes place. If, however, this congestion is too long maintained from the excessive amount of work required, the healthy action of the gland or organ is interfered with, and a diseased state is the result.

not only is the growth rapid, but there is a great wear and tear of body and mind, both at work and at play. If they are not properly nourished at this critical time they develop badly, their blood becomes poor, and hereditary tendencies are encouraged. Variety and palatability of food must be studied as well as regularity of meals. At this period, that is after six or seven years of age, it is always important to see that the interval between meals is not too long, for by prolonged fasting many are very much injured. A glass of milk, or a little bread and butter between breakfast and dinner, or between dinner and supper, is a great help in maintaining strength and vigor, and very important to a child who is delicate or whose appetite is small.

A child requires a great deal of fat and nerve making food: in milk we have both these requisites. Oatmeal contains a large amount of phosphate of lime and soda, the yolk of an egg also contains phosphates, important articles at this age to build up bone. All farinaceous articles are more or less fat making. Meat is essentially a nitrogenous article of diet, it builds up the muscles, but as we have in farinaceous food, white of eggs and milk, also muscle-making or nitrogenous elements, a large amount of meat is not necessary. On the contrary it is actually injurious, as, if it forms the greater part of the meal, it thereby deprives the system of the fat and nerve making food, which is so essential for animal heat and nerve force, and it moreover acts as an irritant upon the bowels and kidneys. Many of you have doubtless noticed, that young children who are large meat eaters are very slender, prone to have coated tongues, foul

breath, indigestion, and to talking in their sleep. Whereas those whose food consists largely of milk, farinaceous food, light vegetables, and only a judicious amount of meat, are fatter, have a healthy complexion, rosier cheeks, and are generally of a happier and brighter disposition. As the boy or girl approaches the age of eight or nine, when they are full of life and vigor, meat is generally required more than once a day, that is meat with the dinner and a little in the morning for breakfast. Be careful, however, and do not let meat diet crowd out the other varieties of food. It is well to teach children, when they are old enough to take hearty food, to eat the fat of meat. Fat is important for developing nerve force. It is also essential for keeping up animal heat, and furnishes the basis of all cell nutrition. By fat we do not mean grease. The natural fat that is taken with meat, milk, and butter, is wholesome and desirable for the child, and is very easily assimilated; but grease, like meat gravies, and all kinds of food fried in grease, is indigestible and should never be given to a child.

In proportion to its size, the child requires a greater amount of hydrocarbon or heat food, than the fully developed man; this is necessary in order to supply the wants required in growth, and the force expended in restless activity. In addition to fat, we have another element which is heat making, namely sugar, and also, to a slight degree, the starch of farinaceous food, for the starch is converted into sugar in the system. The natural craving for sweets is perhaps more than the desire to gratify the palate, it is the craving upon the part of nature for carbo-hydrates.

The great danger in giving saccharine articles of food, consist not so much in their use, as in their abuse. A certain amount of sugar or candy is harmless for children, but it should be given with food or immediately after eating, and in small quantities. When sugar or candies are given between meals, an acid fermentation is apt to take place, the digestion becomes deranged, the appetite fails and does not return until the sweets are abandoned. Children whose diet is largely composed of farinaceous food and milk, with a proper amount of butter, do not as a rule crave sweets as strongly as when these articles are sparingly given. The rule I would suggest, is that when a child is vigorous, has good digestion, and takes plenty of milk and farinaceous food, you may give sweets and candies in moderation, but when the digestion is defective, appetite poor, and the child delicate, sweets should be withheld.

Ripe fruit is not only acceptable to children but is an important article of diet for them. The vegetable acid contained in the fruit is a good tonic, and, when the fruit is taken in moderation, exerts a beneficial effect upon the digestive organs. Study to make the diet of children palatable as well as nutritious, remember it is quality, as well as quantity that gives strength. A vigorous child of twelve or fourteen years of age requires as much food as a grown person. The dietary of childhood consists of milk, farinaceous food, bread, butter, vegetables, fresh fruit, stewed fruit, eggs, fish, meat and simple puddings. Let the child have an abundance of all simple articles of diet. Do not check him in his appetite, when food of a proper kind is taken at proper hours. It is far better

to risk over feeding, for, if underfed, development is in a measure arrested.

Pastry, fresh home-made bread and warm biscuits, are articles of food very difficult of digestion, and should never be given to young children. If a child of twelve or fourteen years of age is vigorous and strong, has good digestion, and eats heartily of proper food, pastry can now and then be given, but should be absolutely avoided under any other circumstances. Tea and coffee should never be given to a child under thirteen years of age, indeed it would be better to postpone them as long as possible. They are unnecessary, besides they are excitants, and are prone to derange the digestion. To maintain a healthy digestion all stimulating food should be rigidly avoided. Pickles, peppers, spices and highly seasoned food should be forbidden, not only for the same reason that we forbid tea and coffee, but because they pervert the appetite, create in the child a desire for highly seasoned food, which fostered, in turn leads directly to intemperance in later life. If during childhood and early youth, the stomach is kept free from baneful influence of all stimulating food, I am convinced that there would be fewer drunkards.

The danger of injudicious feeding between meals cannot be too strongly deprecated. If the child is allowed to eat at irregular intervals, whenever the appetite dictates, the functions of digestion are often so perverted, that for the remaining years of life, he is a confirmed dyspeptic, and dyspepsia is but the starting point of many diseases. During the period of school life especially, meals are apt to be taken with great irregularity. Hurrying to school, and later hastening

to afternoon play, causes the child to forget hunger in the eager desire to join his playfellows, then coming home with hearty appetite sharpened by exercise, he will eat often whatever he can find, however indigestible, and the true appetite for the following healthy meal is gone. The child should not only have his meals regularly, but he should be compelled to spend sufficient time at them, to eat slowly and without excitement. Food should be carefully subdivided by cutting it in small pieces before putting it in the mouth, and by chewing it thoroughly, in order that when it reaches the stomach, the digestive juices can act upon it, and more readily reduce it to a solution for absorption. Hurry and excitement when eating, divert the attention of the nerve force from the act of digestion, and consequently food is not so well digested. Repose and quietness on the other hand, favor the digestive act. It is therefore important that a child should be compelled to eat slowly, and never be permitted to leave the table until all shall have finished, otherwise the food will be insufficiently masticated, and the habit of "bolting" his food will soon be acquired.

A child's digestion may be seriously impaired by the unsuitable lunch prepared for him to take to school. Such injurious things as pies, cakes, and sweets, are slipped in the basket to "tempt his appetite," or he is given a few pennies, with which to purchase tarts and cakes from the nearest confectioner. I need not say that this habit is productive of immense mischief; indigestion, a sour stomach, and loss of appetite for the regular meal awaiting his return from school, are but a small part of the damage. A little stale sponge

cake, or a few ginger snaps, or well cooked ginger bread may be allowed, if other things, such as bread and butter or cold meat sandwich, are also supplied. The yolk of a hard boiled egg is very digestible and nourishing.

A child under ten years of age should never be kept at school long enough to necessitate carrying a luncheon. If the school opens at nine o'clock, the child should return by half-past twelve, and the school hours for the day be over. In the case of older children, the custom existing in many country towns of a long intermission from twelve until two o'clock, is certainly beneficial to the health of the child. It allows sufficient time to walk home leisurely, eat quietly, and the digestive act is fairly progressed before returning to the afternoon duties.

The question—"Shall children be allowed to follow out their own instincts as regards the food they shall take?"—is one often discussed by parents. Because there is a dislike to oatmeal, or hominy, or meat, or milk, or any other article of food proper for a child, shall this dislike be allowed to govern the bill of fare, and the distasteful article be omitted? I must from my own observation give a negative answer. A young child is a perfectly helpless being, dependent for all things upon the guidance of its elders, without instruction it is incapable of selecting proper food. I might almost say that the appetite is by nature perverse, and requires as much guidance as the morals and education. The youngest child will often take with apparent relish tea, coffee, wines, brandy, spices, and food which a judicious person knows is harmful for the delicate stomach of a child. In the majority

of cases the child's taste may be cultivated for any article of food. Neglecting to make food savory, insufficient cooking of farinaceous food, and sameness of the bill of fare, aside from notions and whims, are great causes for creating dislike to certain articles of diet. The same food should not be given so frequently, that children begin to dislike it. Remember that a variety of food is essential to good appetite and digestion. One mother will say that her children will not eat farinaceous food, another that they will not take milk, another that they will not take vegetables. When this is the case, the inference is that the mother has not exercised proper control, or commenced the guidance of her children early enough. With a few exceptions every child can be taught to take farinaceous food, milk, vegetables and all articles suitable for a child to eat. In cultivating a liking for a distasteful article of food, place only one or two teaspoonfuls of the food on the child's plate, and insist upon it being eaten or taken as a dose of medicine; if this is repeated from time to time but not too frequently, the taste for the food will, in the majority of instances, be acquired. If, however, you place a quantity of the distasteful article before the child, you will only intensify the horror and disgust for it. I have known of a great many instances where children have acquired a fondness for the food that they formerly abhorred, by carrying out my suggestion.

The enforcing of a bill of fare that is distasteful, requires however good judgment, because children as well as adults have idiosyncrasies, and may be unable to digest certain food even though it may be good.

If therefore, after fair trial, it is fully ascertained that a child thoroughly abhors certain articles of diet and cannot digest them, it is only right that the objectionable article should be discarded. Children who are whimsical and notional about food, who rule their parents, and are their own guides about what they will or will not eat, frequently get along smoothly for a time, apparently none the worse for the improper food, but when illness overtakes them, the result of this misguidance stares the parent in the face. I can recall many instances, where children in health have been allowed to gratify their appetites, and have never been compelled to observe obedience in eating, when taken seriously ill, refuse to take any article of diet usually given to the sick. Nourishment was given only under an excitement and struggle, although pie, cake, hot bread and other accustomed articles of food were called for. How different the picture when a child obeys, and takes all food given. I have known time and again cases where the lives of children, precious to their parents, could have been saved if the parents had exercised a little more judgment, and had not only taught their children to eat proper kinds of food, but had enforced obedience in eating whatever was placed before them.

Another very important matter to enforce is regularity in, and sufficient amount of sleep. Remember that a child's organs are doing double the amount of work, they are not only building up the tissues, but are repairing the wastes; the child therefore requires a great deal of sleep. Up to the fifth year of age, twelve hours of repose is necessary, together with at

least an hour in the middle of the day, in other words, a child under five years of age should go to bed at six o'clock P. M. and sleep until six o'clock A. M. About the fifth year, the noonday sleep may be omitted, yet the night sleep should be of the same length until the eighth year, and then gradually diminish until, at the time of puberty, when nine or ten hours sleep are sufficient.

During sleep the wasted powers are renewed. Children who are wakeful, whether from disease or nervous irritability, waste very rapidly. Dr. Richardson wisely remarks that "In the child, too little sleep induces symptoms of restlessness, peevishness, weariness at play, emaciation, indigestion, and great pallor of the face and surface of the body. The enjoyments of the waking hours are curtailed, and a dullness, which is commonly mistaken for actual stupidity, marks every effort at lesson or at play. These symptoms are followed by an inability to go to sleep at the natural time, and by the occurrence of an unnatural, startled, dreamy, sleep when the eyes are at length closed. The activity of the brain is thus maintained in the dream, and another cause of nervous exhaustion is hereby supplied. The man who dreams does but half sleep, the child who dreams hardly sleeps at all."

In the era in which we live, this necessity for the youthful brain to have plenty of sleep is all the more important. The parents of many of the present generation are of an exceedingly nervous temperament, and we naturally look for a highly wrought nervous organization in their offspring. For this class especially, and for those in whose family there is consump-

tion or feebleness of body, it becomes a matter of the highest importance that the child should have an ample amount of sleep, for, when this is not complied with, there is far greater likelihood of the development of the hereditary disease, while there is less resistance to illness of all kinds. The hour immediately preceding bedtime should be spent in a quiet manner, in order to free the nervous system from all excitement. The romping and excited playing that young children frequently indulge in, and the reading of exciting books that is often permitted with older children, before retiring for the night, is very detrimental and should never be permitted. It stimulates the circulation in the brain, and very frequently causes restless, disturbed, and insufficient sleep. The young child may play in a quiet manner, and the older should be occupied with light games, knitting, and crochet, or they may be read aloud to, provided the book is not exciting, but anything bordering on excitement or brain work should be avoided.

Insufficient amount of sleep often results in smallness of stature, or stunted growth and in insanity in later years. I have said that the nerve force needs a certain amount of rest, in order to build up the tissues, and repair the wastes. If this full amount of rest is not obtained, the building up process is likely to be interfered with, or, if successful in both building up and repairing the wastes, the nerve force is apt to suffer a collapse in after years. Like the boiler in a factory, that will be of service for many years, under a reasonable amount of work, but which when run under high pressure, with roaring fires, very soon gives out and we have an explosion.

There is another point about which I must say a few words. I allude to constipation. Many parents and nurses are not aware of the misery and discomfort, to say nothing of ill health, that they are responsible for, by neglecting to impress upon the child the necessity of a daily action from the bowels. The statement of the young child should not be relied upon, but it should be the duty of the mother or nurse to see that the act is accomplished. The child grown older and reaching the period of school life, is very apt to hasten out to play, or school, and neglect the call of nature. Now if nature's calls are frequently neglected, nature will after awhile cease to convey to the brain, the impression that the bowels should be evacuated, and we are forced to give a stimulant or excitant in form of medicine before they will act. Neglecting to form this daily habit with children brings great discomfort in after life; aside from this moreover there is a vitiation of the system, a self-poisoning, an absorption into the blood of the gases (particularly sulphureted hydrogen) and other noxious matters. As a result, there follows headache, or lassitude, or loss of memory by poisoning the nervous system, indigestion, cloudy or bad complexion, and the child is often stupid or dull, for which it is often unjustly punished. Constipation is also frequently induced by want of sufficient physical exercise, and by defective nerve force.

During the period of development, the body needs thorough protection. Too scanty clothing allows the surface of the body to be continually bathed, as it were, in cold air. An extra expenditure of nerve

force is necessitated in the effort to maintain the proper standard of bodily heat, so essential to perfect health, the nervous system is thereby exhausted and we have a depression or loss of vitality. The blood is, moreover, driven from the surface of the body to the inner organs, producing in them a low form of congestion, and an impairment of their functions. The excretory glands of the skin are also hindered in their duty by insufficient protection.

It is to be borne in mind that the skin excretes, or allows to pass through it, a large amount of waste or used up material. In the adult from one to two and a half pints of fluid containing effete or deleterious matter, pass through the glands of the skin every twenty-four hours. It is computed that there are no less than 2,600,000 perspiratory glands on the surface of the body, and that these glands, if placed end to end, would cover a distance of two and a half miles. In the child there is only a smaller number of glands. Proportionate to size, however, the skin of a child excretes more fluid than that of the adult. Now if the skin is not properly protected, the blood which carries all the waste material to the glands of the skin, is driven from the surface, and the waste material must find its way out of the system through some other organ, and in so doing, overtaxes this organ, and renders it more liable to disease. This used up or effete matter, is also retained in the circulating fluid, the blood, longer than it should, and consequently helps to vitiate the system, and render it more liable to bowel and lung trouble, disordered digestion and disease in general.

When the child emerges from babyhood, at two

and one-half years, as it begins to run about and show off its pretty attractive little ways, mothers are very apt to forget the importance of warmth, and thorough protection of the body, and are led to indulge their fondness for pretty effects, by dressing the little one too lightly and often with short socks, thereby leaving the legs exposed. From the second to the fifth year many children are very imperfectly protected. Let me urge all of you who have anything to do with children during this period, to see that the whole body is thoroughly protected with long stockings, and in winter with merino drawers and high neck and long sleeve merino under-shirts next the skin. If this thorough protection is enforced, there will be fewer cases of consumption and nerve depression in after life. Through cold a shock is often given, which, although not apparent at the time, produces an effect later. Like the tender plant put out too early in the spring, and affected by the spring frost, it may still grow, but it is stunted and unproductive, or if productive, its fruit is not so abundant or large as that from the plant which has been protected in early life. The laws of growth and life are the same in the animal as in the vegetable kingdom. When the body is not sufficiently clad, there is a loss by radiation of a certain amount of heat, a lowering of the surface temperature. This necessitates an extra effort of the system to restore the lost heat, and an expenditure of material, which should otherwise have gone to build up the frame and strengthen the various organs and tissues of the body. Should this expenditure continue for any great length of time, the result will be a body small in size or inferior in text-

ure, or both. If the body is properly clad there is a saving of bodily heat, consequently a saving of a force which is utilized in building up the tissues. Liebig says "our clothing is in reference to the temperature of the body, merely an equivalent for a certain amount of food."

The necessity of suitable clothing for the young, has been very pointedly exemplified in the case of a little child, two and a half years of age, who has recently been under my care. Last summer the child was the picture of health and beauty. A month ago, (the latter part of November,) I was consulted by the mother who was anxious about her daughter. I found the child thin and pale, her ears of a waxy color. She was peevish, wakeful at night, with small appetite, disordered digestion, bowels sometimes constipated and frequently relaxed, beautifully dressed,—but how!—arms covered with the thinnest possible material, legs bare for two-thirds of their length, and the feet covered with short socks and slippers. The only prescription ordered was long and warm stockings to cover the whole leg, long sleeves and merino undershirts. The result was after the lapse of a month, the restoration of child's health and beauty. This is a very common experience, many children are kept in a pale and fretful condition, with defective appetite and digestion, and thousands more are sent to their graves owing to insufficiently protected arms and legs in doors as well as out of doors, during the spring, autumn and winter. A chill to the surface of the body is a prolific cause of disturbance to the digestion, arresting the functions of the liver, and bringing about the accompanying symptoms of loss of appe-

tite, diarrhœa, colic and want of nutrition. In your zeal that the child may be thoroughly protected from cold, there is the possibility of erring on the other side, and that by being too much and too heavily clad, a tenderness and delicacy of the body may be induced, with a liability to sudden colds from slight changes of temperature. A child has naturally an active circulation, and perspires freely, and their clothing should be of material, light but warm, that will permit the perspiration to evaporate freely without danger of a chill.

The importance of two elements indispensable for the health of a child, cleanliness and pure air, are so clearly understood by you all, that I will pass them by with a brief word of caution about impure air. Pure air is equally as important as good food and proper clothing. The unsanitary condition of the house, permitting foul odors from the drains or water closet to contaminate the air the child breathes, will devitalize the system, poison the nerve centres, and exercise a baneful effect upon growth and health. If the air is loaded with a decomposing material from drains, or vitiated for want of proper ventilation, the child will display all the symptoms manifested by children who have bad food and not a sufficient amount of sleep; such as pallor of countenance, headache, want of energy, feebleness of body and liability to colds.

The air of the nursery or bedroom is frequently rendered unwholesome by burning too much gas. Bear in mind that one ordinary gas burner consumes as much oxygen, or vitiates as much air, as five peo-

ple. So that if the gas has been burning for any length of time in a sleeping room, fresh air from out of doors should be admitted before retiring for the night. The same care should be exercised to admit fresh air, whenever the nursery has been used as a sitting or play room during the afternoon, for the atmosphere is also polluted by the exhalations from the lungs. If upon entering the bedroom from a pure atmosphere, there is the slightest odor perceptible, you may feel assured that the room is insufficiently ventilated, that the air is vitiated, and therefore detrimental to health.

A full amount of exercise in the open air is another of nature's requirements for a vigorous development. Every child should have several hours of recreation daily for out of door sports, to romp and run, and exercise vigorously. The quiet walk with the nurse or companion, will not give the necessary amount of exercise. Natural instincts lead a child to run, climb, jump, and to freely use the voice. All this is beneficial and strengthening to the muscles and ligaments, enlarging the breadth of the chest, improving the digestion, sharpening the appetite, and keeping the functions of the body in a healthy condition; it renders the mind more active, and assists in eliminating from the system, the used up or waste materials which are floating in the blood. All this is as important for the girl as for the boy. Do not therefore dress children of either sex, in such fine clothes, that they cannot follow out the natural inclinations to exercise freely. In inclement weather, the recreation and playing should be indoors, but out of door exercise is important when the weather permits, for, added to the exercise, the child

breathes pure air, and has the life giving power of sunshine.

An inactive indoor life for the young lowers the vitality, retards the full development of the muscular strength, induces a softness and delicacy of all the tissues, as well as an enfeebled power of resisting cold and diseases of all kinds. The housing of children, the breathing of impure air indoors, and insufficient clothing in winter, are the chief causes of the catarrhal troubles, coughs and colds, that are so prevalent in many households. Because a child is delicate, do not deprive him or her of the tonic effect of the open air, and of strengthening of the muscles by exercise. If the weather is very cold, delicate children should not be allowed to remain out of doors too long at one time, for prolonged exposure to cold has a depressing effect upon the system. If a child is chilled or cold, it should instantly be brought in the house to be warmed. Never permit a child to remain out of doors when crying from cold.

I wish here to warn you against that pernicious habit, of attempting to "toughen" a child by light clothing, by sleeping in too cold a room in winter, bathing if delicate in too cold water, and other hardening (?) processes, that mistaken mothers cause their children to undergo. Do not be guided by enthusiasts on the subject of cold, but profit by the advice of physicians, whose study and experience enables them to give proper advice in this matter. The only way to harden a child, by which is meant, rendering him less susceptible to the effect of cold, and giving him strength and vigor of body, is by following the laws of health, that is, a sufficient

amount of clothing, plenty of out-door exercise, pure air to breathe, simple and good food, with ample amount of sleep. I have in mind two school companions, who were naturally delicate, and wished to harden themselves so that they could do as other boys. As a result of their hardening process, going without overcoats, sleeping with windows wide open in winter, and other foolish habits, they died from consumption in early manhood. This is the fate that befalls many. Do not imagine that all children can be brought up under the same rules. Judgment and common-sense must be brought to bear in deciding upon matters of dress and amount of exercise.

The requirements necessary for a successful life are far greater at present, than was the case years ago, and it is important that the child's development should be carefully guarded from every thing that will detract from the possession of a vigorous physique and healthy nerve force at maturity. Care must be observed that the nervous system, which controls and directs the working of the whole organism, is not exhausted or overtaxed, for when this occurs, all the functions of the body are more or less perverted in their action, and the full vigor of nerve force is frequently not regained. A parent's aim for his child should be, that he may develop a healthy physique, rather than that he should obtain any amount of knowledge from books. The mental faculties should be allowed to develop slowly, as much as possible without stimulation, and the life should be more like that of a young animal. The early stimulation of the brain, diverts the nerve force from its most

important duty of directing the growth of the body. Among the educated classes of society, the child under six years of age will absorb ideas as rapidly as it is good for the brain, simply from the associations with older people, from the stories read aloud, and from the illustrated blocks and picture books, that are now so abundantly supplied to the nursery. The mind must not be overtaxed by committing to memory too many nursery rhymes. Young children are often made wakeful at night, have dreamy startled sleep, and are unable to take the noon day nap, which is so important for them, simply because the brain has been over stimulated and excited by too much memorizing.

The age at which a child should commence school duties, opens a subject upon which there is a great diversity of opinion. The majority of physicians, and those who have made a study of the hygiene of childhood, are convinced that a child under six years and a half or seven years of age, should not be given regular lessons from books, or have any school duties, and that from the age of seven to ten, the confinement in the school room should never be longer than from three to three and a half hours daily. Sending the child to school "to be kept out of mischief," is a dangerous expedient.

Kindergarten instruction may be advantageously given between the ages of four and seven. When this form of instruction is intelligently given, there is no undue stimulation of the brain at the expense of the body, but both are developed cautiously and simultaneously, and the true purpose of education is fulfilled.

The attention to hygiene, now more thoroughly

understood, and the more intelligent care of infants and children, has lessened, to a very great extent, the mortality of the young. As a result, a very much larger percentage of children now live who are delicate by inheritance, than was the case during the early days of our ancestors. This inherited delicacy is too often not recognized, and the child is put under the same mental and physical regimen as children of stronger constitution, instead of being allowed to mature more slowly, and acquire a firmness of tissue and nerve strength, before the strain of mental culture is required. It frequently happens that children who are delicate by inheritance, have very active mental faculties, they have bright minds and are quick and eager to learn. Parents should be very guarded in these cases to curb the child's precocity, and should pay more attention, during early youth, to strengthening the body, in order that at maturity there may be a sound mind in a sound body.

The question of mental education for the young, is too broad a topic for me to enter upon in this lecture. I merely wish to utter a few words of warning as to the danger of too early and forced instruction. Some of the immediate effects of which are pallid countenance, puny, unhealthy looks, defective digestion, susceptibility to disease, feeble power of recuperating from illness, and a fretful, irritable disposition. If the life of the child is spared, the future is liable to be blighted by a general want of strength, and by disorders that result from a defective nerve force.

Remember that during childhood the seeds for future health, vigor and, I might add, happiness are

sown. "As ye sow, so shall ye reap." Dr. Erasmus Wilson very fitly remarks, "Youth, it cannot be too often repeated, is the time for storing health both physical and moral; and every act which can in any way impede or frustrate this all wise intention of nature, will tend to lay the foundation of a weak and imperfect body, and shorten the days of its possessor." The laws of health are just as fixed as other physical laws, and any infringement of them is certain to be followed by evil results; so that if the body is not properly clad, if there is insufficient or improper nourishment, if there is a deprivation of sleep, or exercise, or pure air, or sunshine, if the brain is overtaxed with studies, or if any of the laws governing health are violated during childhood, a penalty will be required, if not during the period of youth, certainly later in life.

To enable a parent to carry out effectually the regulations necessary for the healthy growth of a child, it is essential that the child should be taught obedience and self control. Lessons in obedience can be, and should be, commenced during the early months of infancy, for children are like animals, they will intuitively recognize the necessity of obedience and the authority and right to be commanded, when the commands are given in a kindly yet positive manner. When children rule their parents in deciding what they shall eat, or how they shall dress, or any of the duties of life, there is very little opportunity for observing the laws governing health; so that the mainspring in the hygiene of childhood, is discipline in obedience and in self-control. When this discipline is not exercised, when children are allowed to

carry out their own ideas, to gratify their own wishes, and are not taught to have a respectful deference for the authority and opinion of their elders, they are apt to grow up selfish, and to exert an unpleasant influence upon those about them. Disciplining children in self-control and to implicit obedience, is conducive to a more balanced state of the nervous system, and to a happier and more cheerful disposition.

Herbert Spencer says of children—"To tens of thousands that are killed, add hundreds of thousands that survive with feeble constitutions, and millions that grow up with constitutions not so strong as they should be, and you will have some idea of the curse inflicted on their offspring by parents ignorant of the laws of health. Do but consider for a moment that the regimen to which children are subject is hourly telling upon them to their life-long injury or benefit, and that there are twenty ways of doing wrong, to one way of doing right, and you will get some idea of the enormous mischief that is almost everywhere inflicted by the thoughtless, hap-hazard system in common use. *Is it decided that a boy shall be clothed in some flimsy short dress, and be allowed to go playing about with limbs reddened by cold? The decision will tell on his whole future existence,—either in illnesses or in stunted growth, or in deficient energy, or in a maturity less vigorous than it ought to have been, and consequently a hindrance to success and happiness.* Are children doomed to a monotonous dietary, or a dietary that is deficient in nutritiveness? Their ultimate physical power and efficiency as men and women, will inevitably be more or less diminished by it. When sons and daughters grow up sickly and feeble,

parents commonly regard the event as a misfortune,—as a visitation of Providence. Thinking after the prevalent chaotic fashion, they assume that these evils come without causes, or that the causes are supernatural. Nothing of the kind. In some cases the causes are doubtless inherited, but in most cases foolish regulations are the causes. Very generally parents themselves are responsible for all this pain, this debility, this depression, this misery. They have undertaken to control the lives of their offspring from hour to hour; with cruel carelessness they have neglected to learn anything about these vital processes, which they are unceasingly affecting by their commands and prohibitions; in utter ignorance of the simplest physiologic laws, they have been year by year undermining the constitution of their children, and have so inflicted disease and premature death not only on them, but on their descendants."

My remarks, thus far, are applicable to the whole period of the childhood of the boy, as well as of the girl. I now wish to call attention, for a few moments, to that period of life of the girl which is termed puberty.

The physician's attention is frequently directed to the want of intelligent guidance of young girls at this time of life, when, I may say, they cease to be girls and become women. A crisis, when, too often through neglect, the seeds of future ill health and of a miserable existence are sown. A case in point will perhaps illustrate what I mean, and serve as a text for this important subject. I was once called to see a young girl of about fourteen years of age, who from a state of apparent health, was suddenly prostrated

while at a child's party. She was taken home, and remained in a condition of extreme exhaustion or lowered vitality for several weeks. Being of an active temperament, she was quick and eager to learn, her studies had been continued without intermission, save for a few school holidays, summer and winter for two years. This unnatural strain gave the nervous system no rest, it burnt up the nerve force as rapidly as it was created. The overheated room at the party had a depressing effect upon her, snapped the tension to which the nervous system had been subjected, and a condition of physical and nerve exhaustion set in. This depression was characterized by great feebleness of the digestive organs, a condition of torpidity, feeble heart action, headache, a general sense of weariness, but no fever. She remained in this condition for several weeks, gradually recovering her strength, but showed for many subsequent months an appearance of weariness in her countenance. Her studies had to be omitted for more than a year, and when resumed, for several months only light mental work was possible.

The early history of this young girl, is but a repetition of many others which are constantly brought to the notice of physicians, where the education of the mind is at the expense of the body, when, at the period of life when the nervous structure is developing, when the reproductive organs are taking on new changes, the nerve force is exhausted by brain work and does not have sufficient rest.

The question is often asked,—why is it, that young children and girls of the present time, cannot dress and do as did their mothers and grandmothers at their

age? Excepting where there is hereditary feebleness, girls of the present generation will be found just as capable of enduring strong physical exercise, and just as robust as their grandmothers were, provided the laws governing health are observed. Degeneracy is most frequently the result of exhausted nerve energy, improper feeding and an inactive indoor life. Let us contrast for a moment the life of the present generation with that of three generations ago. Our grandparents were, in a measure, "the survival of the fittest." Their manner of living was such, that the majority of delicate offspring perished in early life, and those who survived, and whose constitutions withstood the strain, were hearty in body and mind. Bare legs, arms and neck, as was the fashion of the time, cannot be indulged in with impunity by the growing children of the present day. Mothers must disabuse their minds of the common error, that because they and their mothers dressed, or rather were undressed, in the manner indicated, that their children can be clothed in the same manner. We at present live in an essentially fast age. Our parents and grandparents lived a quieter life. There was then an absence of many of the excitements, which call into action the nerve force of the present generation. The rush and excitement that our every day life calls for, did not exist three-quarters of a century ago, and consequently the tax upon the mind, and the wear and tear of nerve force, both of the young, and old, was not so great then as now. The home life of the present generation is, as a rule, full of ceaseless activity. The sensational and exciting events that the newspapers recount, reach the various homes to be discus-

sed before children, and cannot but have a stimulating effect upon the brain of the young. The books used at school, although many of them admirable and desirable, also call for an amount of brain work and an exercise of thought, which was not required in the early days of our grandparents.

The life of a century ago was, on the contrary, a quieter one, and less conducive to nerve exhaustion. Books were of a less stimulating character, the daily papers did not introduce in the family circle topics of such an exciting nature, there was an absence of the hurry and rush of modern travel and business. In other words, the life of to-day is productive of nerve excitability to be followed by exhaustion, while the life of olden days was more favorable to nerve rest. In those cases where bare legs, arms and neck were adopted by our ancestors, evil results must have followed, and fallen, if not upon the individual herself, certainly upon her offspring, for the laws governing health were the same then, as they are now. Those who are vigorous and strong, can resist an evil influence longer than those who are weak.

The comparison of the life of our grandparents with the life of the present generation, is brought forward to show that in this era there is a greater call for nerve energy, and danger of exhausted nerve force, and to intensify the great importance for mothers and guardians of the young, to watch and guard carefully, the nervous and physical condition of young girls as they bloom into womanhood.

The good Book says, that the sins of the fathers shall be visited upon the children unto the third and fourth generation. This is perfectly true of the physical, as

well as of the moral sins. How often do we see fine, handsome, stately mothers and grandmothers of seventy or eighty years of age, with clear eyes, fine complexion, erect carriage and every appearance of good health, surrounded by feeble children and grandchildren. This feebleness is not entirely due to the follies of the present manner of living, but may be largely due to the erroneous life of the mother or grandmother, who as "survival of the fittest" apparently grew physically and mentally to perfection, yet her fruit suffered from the result of her indiscretion. If you bear in mind this truth, and guide accordingly the young girl of the present generation, you are not only aiding her future, by giving her a healthy body and mind, but you are conferring a blessing on her children. A tree in the orchard may recover from the shock of a cold spring, be rich in foliage, and have a stately appearance during the summer, yet not be so productive in the quantity and quality of its fruit, as a tree that has had no shock.

There are a few fundamental rules, aside from the suggestions already given for the care of children, that should be observed with young girls at this time, the neglect of which, only too frequently inflicts pain and suffering on body and mind in after years. As the young girl approaches this time of life, a change is noticed in her demeanor and general habits of life. There is frequently a derangement of digestion, the appetite is capricious and morbid, there may be depression of spirits, languor, a certain amount of mental inactivity, at times a restlessness and irritability of an hysterical nature. The child's mind should be prepared for the coming change. The mother

should, by a few judicious words, put clearly before her daughter the nature of the coming event, and explain the necessity of closely following the instructions for the care of herself at this time. The great change that is going on in the system, produces a disturbance in the circulation, this affects the appetite, and occasions the symptoms above mentioned. Disturbances of all kinds should be promptly investigated and relieved, in order that the child may be kept, as nearly as is possible, in a perfect state of health, and that all stumbling blocks may be removed from nature's way, in this crisis she is bringing about. The digestion should be kept in perfect order, the bowels regular, morbid cravings should not be indulged. Food should be of a simple, non-stimulating character. If there is any languor or debility, it should be met by tonics, plenty of fresh air and good food. The depression of spirits or irritability, may be relieved by regulating the digestion, by tonics, by relief from all mental work, and the society of cheerful companions.

I have spoken of the importance of protecting the body from cold; the directions given apply now with double force. In the climate in which we live, it is absolutely necessary that the body of every individual should, in winter, be protected by flannel or silk worn next to the skin. When this is neglected, there is a great waste of nerve force in the effort to maintain the proper standard of animal heat. Special attention should be paid to the protection of the feet. You are all aware of the disastrous effect of a cold foot bath during the monthly period; a severe congestion takes place in the pelvic region, followed frequently

by inflammation and death. When the feet are bathed constantly in cold air, as they are when slippers are worn in the house in cold weather, and thin shoes in the street in winter, we have resulting more or less congestion, or over supply of blood to the pelvic organs. Oftentimes this congestion is so slight that its presence is not apparent, if, however, it is maintained for any length of time, structural changes take place, and create the pain and distress so many girls and women undergo. If any one organ of the body is already in a state of congestion, this congestion will be intensified by cold to the extremities. You now see the importance of protecting the feet and legs of the young girl, when the change in her system is taking place. At this time, the pelvic organs are in a condition of increased nervous irritability, a natural, healthy state of congestion; but if we have thrown upon them this abnormal congestion, disease is the result. Therefore, one of the first rules to observe with young girls, and I should add women also, is to protect the feet, not only at the special times of the month, but at all times. When the physician urges the necessity of flannels being worn next to the skin, both undershirt and drawers, and of protecting the feet by warm boots, and avoidance of slippers in winter, many will use the argument that they are well and strong, and point to others who are also strong notwithstanding improper dressing. This is very poor reasoning; one may not feel the consequence of a wrong deed, but that does not make the deed right. Many who are insufficiently clad, may say that they do not *feel* cold. This may be true, for the surface of the body and feet may cease to be conscious of cold,

from habitually being without sufficient protection, just as, by use, we cease to be conscious that our faces are cold, even when out of doors; but because the sensation of cold no longer warns us, it does not follow that the system escapes injury. Thousands and tens of thousands, die in their effort to follow the example of the foolhardy ones, who defy the laws of nature.

Another important matter to observe at this time, is the avoidance of too great mental strain. Remember that the nervous system is called upon to perform a new duty, extra work is required of it, and one must be watchful that it is not overburdened. For several months before the event, and during the first year of the change, school duties should be very light, and at times omitted, if any symptom indicating marked nerve disturbance supervenes. This nerve disturbance is shown by restlessness or headache, excitability, irritability of temper, or by an hysterical condition when the young girl cries without cause, or from a cause which, at other times, would have no effect upon her. If there is a pallid countenance, weariness and loss of appetite which is not improved by tonics, school duties should be omitted for a time, and exercise in the fresh air substituted. Sleep is one of nature's greatest restorers; parents cannot be too particular therefore, that at this time especially, the young girl obtains her full amount of sleep, of nine or ten hours. The disastrous effects of overtaxing the brain at this time of development, often follows one through the remaining years of life: the periodical sick headache to which so many women are martyrs, are, in many instances, entirely the result of an overtaxed brain at the time of puberty. The nervous

system of a girl is more highly organized, more sensitive to impressions, and therefore needs more rest and protection than that of a boy. Her organs of generation require the full amount of nerve nutrition for their perfect development. When the nerve force is diverted by too great mental strain, or repeated shocks to the system from cold, as the result of too scanty clothing, there is very apt to be an arrested development of the ovaries and uterus, and, when marriage takes place, there is a strong likelihood of a childless home, or a home with only one or two feeble children, who will probably develop into miserable men and women.

I have already explained the systemic disturbance arising, when there is not a daily action from the bowels. During puberty, the evil resulting from failure to form this habit is very great, for we have, in addition to the systemic disturbance, a pressure upon the blood vessels and nerves in the pelvic region, which interferes with the circulation, and healthy growth of the tissues in these parts.

Dr. Thomas Addis Emmet, of whom it may be said, that no one is better qualified to express an opinion regarding this guidance of young girls during puberty, says, "To enable her to reach the highest physical development, the young girl in the better class of society, should pass the year before puberty, and some two years afterwards, free from all exciting influences. She should be a child as long as possible, and made to associate with children. Her dress, diet and habits of life should be carefully looked after as if she were a child, and, above all, the habit of regularity should be enforced in all details. Her mind

should be occupied by a very moderate amount of study, with frequent intervals during school hours of a few moments each, and to be spent, when possible, in the open air. There should be no studying at night under any circumstances. Each menstrual period should be passed in the recumbent posture, until the system becomes accustomed to the new order of things, and the habit of regularity is fully established. She should never expose herself to cold nor over exercise, during the twenty-four hours before the expected period, and at the same time lessons should be discontinued."

During the later years of girlhood, as near an approach as it is possible to mental and physical rest, should be observed during the few days of indisposition each month. Long walks, running rapidly up or down stairs, dancing, skating, too prolonged standing, practicing on the piano, or any strong physical exercise should be forbidden, and severe mental strain should be avoided. The want of sufficient rest during these few days, is a prolific cause of the uterine difficulties which are so prevalent among young women.

Although my remarks in this lecture are chiefly intended for the guidance of very young children, that is to say up to puberty, most of the suggestions are equally important and applicable, during the later years of development until maturity has been reached. As the young girl advances in her "teens," her thoughts turn to social pleasures or to personal adornments. She will often assert and exercise her own judgment, and in doing so, will, through ignorance

or vanity, infringe upon the laws of health, and bring upon herself sorrow and suffering during the years to come. This later period is also an important one, and requires the same close attention to the protection of the body, to obtaining sufficient exercise, sleep, sunshine and proper nourishment, as we have already shown to be necessary for younger girls.

The following is but too often the repetition of the life of many a young girl, of from fifteen to eighteen years of age. Her studies are numerous and difficult, and call for close application, often both afternoon and evening being devoted to them. She goes to bed exhausted, awakes in the morning with a feeling of languor, without appetite, frequently with headache and nausea. She cannot eat any breakfast, and will start for school after taking a cup of coffee or tea, and, perhaps, some slight article of food. She remains in school until two o'clock, taking, during recess, some indigestible lunch from the bakery or confectionery, and returns home in the afternoon with impaired appetite, and too tired to take more than a short walk. Whenever it is noticed that a young person eats little at breakfast, feels languid in the morning, and too tired to take a brisk walk in the afternoon, it is an indication that something is radically wrong, and it is highly important that medical advice should be sought. When this is obtained, it is found, in the vast majority of cases, that other factors besides studies enter into the cause of the ill health.

At this age, social entertainments are not infrequently, the direct cause of impaired health and strength. The too frequent attendance upon parties, sociables, concerts and the theatre during school days,

means a deprivation of a certain amount of sleep, extra fatigue, the breathing of impure air, and above all, the nerve exhaustion following the excitement. School duties require all the nerve force, that can be spared from the building process which is still going on in the system, so that the combination of undue social excitement and difficult lessons, has a damaging effect upon the health. A judicious mother will not allow this combination, but it is altogether of too frequent occurrence in many homes.

Physicians are constantly consulted by parents, who say that their daughters' health is being undermined by school duties. There is frequently a good deal of truth in the statement that they are studying beyond their years, but we also find, only too frequently, that the mother is ignorant of the laws of health, and, that through this ignorance, she is not doing her duty to her child. She is often responsible for her daughter's ill health, by permitting her to sit up too late at night, attending parties and concerts, by allowing her to wear thin boots and unsuitable under clothing, by not insisting upon sufficient nourishment, and by permitting too much exercise at the monthly period. With careful attention to personal hygiene, and avoidance of an excess of excitement and of a too luxurious life, the mother will find that her daughter will be capable of greater mental work, and that the strain of school duties will not be incompatible with vigorous health.



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